



## Meat consumption in North-East India: Pattern, Opportunities and Implications

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### ABSTRACT

Meat is an important and common source of animal protein in the NE (North-Eastern) states as seen from the expenditure estimates which shows that 15 per cent in rural areas and 18 per cent in urban areas is devoted to meat out of the total food expenditure. The study is based on NSSO data on household consumption expenditure in 2009-10 pertaining to the 66<sup>th</sup> round. The study showed that the proportion of meat out of total food expenditure is almost two to three times more than the national average. Manipur is an exception where the rural households' proportionate expenditure is more than urban households. Chevon/mutton and chicken have lesser supply than demand in most NE states. Beef and pork are relatively cheaper in rural areas and therefore consumed more whereas urbanization may be the factor that influence liking for chevon/mutton consumption in urban areas. Export policy, Infrastructure development, feed sector, and establishment of modern slaughter houses are some of the issues which need attention of the government to sustain meat consumption in the region.

**Keywords:** Meat, Consumption, North-East India, Production

A number of factors can influence household consumption patterns. These can be economic (e.g., income and price changes), social (e.g., urbanisation leading to dietary changes), cultural (e.g., influences by exotic lifestyles), and market development that makes new foods available (Zhou *et al.*, 2005). Among these factors, however, income is seen to be the most influential. The increase in consumer income in fast-growing developing countries tends to induce greater changes in the composition of food consumption (Cranfield *et al.*, 1998; Guo *et al.*, 2000; Gould, 2002).

Livestock rearing and fishery is the most important farm activities performed in almost all NE states. The dependence on livestock as an alternative source of income is significant with livestock accounting for 18 per cent of the value of output in agriculture sector in this region (Kumar *et al.*, 2007). Meat is an important and common source of animal protein in the NE states as seen from the expenditure estimates which shows that 15 per cent in rural

areas and 18 per cent in urban areas is devoted to meat out of the total food expenditure. The importance of meat production and consumption in the region in recent years seem to take a higher platform with few brands emerging in the region in organised production and processing of meat e.g. Arohan Foods in Guwahati and Meat Treat in Shillong.

An in-depth understanding of the dynamics of meat consumption for NE states is invaluable not only for academic exploration but also for policy formation. The objective of the paper is to study the meat production and consumption pattern across the households of different NE states, the demand-supply gap, the per capita expenditure on meat in the NE states and to analyse the imbalance between rural and urban areas with regards to meat consumption. The region is taken for the study as it is the major consumer of meat in the country. The paper will also help to analyse the requirements and need of the present situation of the meat industry in the region. The

**Table 1.** Details of estimate of meat production in 2009-10 (in '000 tonnes)

States	Mutton and Goat*	Cattle and Buffalo*	Pork*	Chicken*	Fish**	Total
AP	3	14	3	1	2.65	23.65
Assam	8.20	5.3	13	5	218.82	250.32
Manipur	0.4	11	7	6	19.2	43.6
Meghalaya	1	23	10	4	4.33	43.6
Mizoram	0.1	3.1	5	1	3.25	12.45
Nagaland	1.8	33	31	0	6.36	72.16
Sikkim	0.04	2	0.31	1	0.16	3.51
Tripura	2	0	8	12	42.28	64.28
NE total	16.54	91.40	77.31	30	297.05	512.30
India total	1155	893	391	2087	7997.98	12523.98
PC of NE	1.43	10.24	19.77	1.44	3.71	4.09

Note: AP=Arunachal Pradesh, NE=North Eastern States, PC=Percentage

Source: \*Basic Animal Husbandry Statistics 2012

\*\*Handbook on Fisheries Statistics 2011

corporate houses frame their policies and strategies at state/ regional level and since (as shown in our analysis) the NE region is predominantly meat-consuming it makes studying the consumption pattern of different types of meat indispensable for them. Further, the study of demand-supply imbalance across the states will help in gaining information on meat-surplus and meat-deficient ones. The study of rural-urban imbalance in meat consumption will help the respective governments to frame their policies so as to reduce this differential and more equitable pattern of meat consumption is ensured.

There are a limited number of earlier attempts that looked into meat consumption in India as a whole or at state/ regional level. These include Sinha and Giri (1989); Gandhi and Mani (1995); Dastagiri (2004). However, none of these studies offer a comprehensive picture particularly for meat consumption in India or at the regional/states level and they are also quite outdated. Gandhi and Zhou (2010) is the latest study on livestock product consumption (including different types of meat) which deals extensively on the issue but again remain focussed at national level. An evaluation of NE states' meat consumption with the latest

**Table 2.** Estimated consumption of different types of meat in NE states in 2009-10 (in '000 kg)

States	Fish/ Prawn	Chevon/ Mutton	Beef/ Carabeef	Pork	Chicken	Others	Total
AP	3912.79	564.12	1745.52	1439.32	2234.36	556.64	10452.74
Assam	153607.30	8469.05	15230.85	18789.35	39099.16	4413.92	239609.63
Manipur	7497.17	35.15	2335.38	1481.41	2279.28	1026.85	14655.25
Meghalaya	6363.34	379.01	8715.79	4075.93	2391.31	310.68	22236.06
Mizoram	1265.47	38.81	854.93	3995.30	1134.14	754.37	8043.02
Nagaland	2880.49	35.33	5674.24	5843.80	2193.06	1145.79	17772.72
Sikkim	435.83	231.62	1326.07	562.15	1028.64	18.79	3603.10
Tripura	36818.45	542.16	409.40	3580.09	7433.05	352.15	49135.29
NE	212780.83	10295.25	36292.18	39767.35	57793.00	8579.19	365507.81
India	2235600	489600	363600	57843.07	1094400	29191.76	4270234.83
PC of NE	9.52	2.10	9.98	68.75	5.28	29.39	8.56

Source: Authors' estimates from NSSO unit level data

Note: AP=Arunachal Pradesh, NE=North Eastern States, PC=Percentage

available data is warranted as the policies regarding the agricultural sector are framed at state level.

## MATERIALS AND METHODS

The study is based on NSSO (National Sample Survey Organisation) unit-level data on household consumption pertaining to the 66<sup>th</sup> round. The NSS 66<sup>th</sup> round, which is the eighth quinquennial round, was carried out between July 2009 and June 2010 and is the latest in the series. As this was a quinquennial round, the sample size is very large and covers almost the entire geographical area of the country, making the sample a representative one. From the data, the observations for 8 NE States viz., Sikkim, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Meghalaya, and Assam were extracted separately for analysing consumption expenditure as well as quantity consumed of meat. The sample size for the NE States consisted of 9153 and 4942 households in rural and urban sectors, respectively. After extracting the data, Average MPCE (Monthly Per Consumer-Unit<sup>(1)</sup> Expenditure) as well as Average MPCC (Monthly Per Consumer-Unit Consumption) of all the different types of meat i.e. fish/prawn, goat meat/mutton, beef/buffalo meat, pork, chicken, others (including birds, crab, oyster, tortoise, etc.) were computed for rural and urban sectors of all the 8 states, of NE as a whole, and at the national level. All the figures were derived using the weights used by NSSO for the sample households. Also, with the use of weights total quantities of all the different types of meat consumed were computed for each of the NE states, of NE as a whole, and at the national level. To get an idea about the demand-supply gap in each of the NE states for different types of meat in 2009-10, demand was considered as total quantities of different types of meat and supply was considered as production of different types of meat in NE states in 2009-10. The data for the production of all meats except fish was collected from *Basic Animal Husbandry Statistics* (2012) whereas the data for fish production was obtained from *Handbook on Fisheries Statistics*

(2011). The Average MPCE on food was also studied for comparing the proportion of meat expenditure in MPCE on food in each of the NE states, of NE as a whole, and at national level.

## RESULTS AND DISCUSSION

The total meat and fish production in the NE states in 2009-10 is estimated at 512.3 thousand tonnes (Table 1) and it accounts for 4.09 per cent of the country's total meat and fish production in the same year. Assam ranks first in terms of total meat and fish production in the NE states with a total contribution of 250.32 thousand tonnes of which 218.82 thousand tonnes is fish. Across the region, maximum production is seen in fish followed by cattle and buffalo, whereas mutton/goat production is least as compared to other types of meat.

The percentage contribution of the region to the country's total cattle and buffalo meat production is about 10.24 per cent, mutton and goat 1.43 per cent, pork 19.77 per cent, chicken 1.44 per cent and fish 3.71 per cent. Comparing across the states for different types of meat and fish, it is found that in case of mutton and goat meat, Assam is the highest producer followed by Arunachal Pradesh whereas other states produce a negligible amount of mutton and goat meat. In cattle and buffalo meat, Nagaland is the leading producer followed by Meghalaya. In pork production, again Nagaland ranks first followed by Assam and Meghalaya whereas, in case of chicken Tripura is the leading producer. Assam is the highest producer of fish in the region; other leading producers are Tripura and Manipur. Sikkim is the lowest producer of mutton/goat, pork and fish, it is seen that production of cattle/buffalo is absent in Tripura, whereas chicken production is nil in Nagaland.

The pattern of consumption of different types of meat and fish in 2009-10 in the NE region is given in Table 2. Percentage of pork consumption in the region is much higher (68.75%) which reflects the importance of pork in the diet of NE people. The regional percentage consumption of fish, beef/carabeef, and chicken is 9.52, 9.98, and 5.28 per cent, respectively of the country total consumption. In other types of meat the total consumption in the region is about 29.39 per cent of the country total consumption which points out the higher consumption of unconventional meat in NE region. Chevron/mutton

1 The consumer units have been used in place of actual numbers as the NSS does not collect data on the allocation of food among household members. So, consumer-units have been used to bring uniformity to the results. The consumer-units have been taken from Nutritional Intake in India, 2009-10.

**Table 3.** Supply-Demand gap of different meats in NE states (in 000 tonnes)

States	Fish	Chevon/ mutton	Beef/ carabeef	Pork	Chicken
AP	-1.26	-0.91	13.44	1.25	-0.44
Assam	65.21	-145.41	-3.17	-2.23	-13.79
Manipur	11.70	-7.10	10.96	4.66	4.52
Meghalaya	-2.03	-5.36	22.62	1.28	-0.08
Mizoram	1.98	-1.17	3.06	4.15	-3.00
Nagaland	3.48	-1.08	32.96	25.33	-5.84
Sikkim	-0.28	-0.40	1.77	-1.02	0.44
Tripura	5.46	-34.82	-0.54	7.59	8.42
NE	84.27	-196.24	81.10	41.02	-9.77
India	5762.38	-1080.60	403.40	27.40	2029.16

Note: AP=Arunachal Pradesh, NE=North Eastern

**Table 4.** Avg. monthly per consumer unit consumption (MPCC) of different types of meat in rural areas of NE states in 2009 (in kg)

States	Fish/ Prawn	Chevon/ Mutton	Beef/ Carabeef	Pork	Chicken	Others	Total
AP	0.366	0.047	0.160	0.148	0.201	0.063	0.986
Assam	0.502	0.022	0.057	0.069	0.124	0.016	0.790
Manipur	0.298	0.002	0.141	0.085	0.107	0.044	0.675
Meghalaya	0.230	0.014	0.352	0.158	0.087	0.014	0.856
Mizoram	0.133	0.004	0.057	0.300	0.157	0.126	0.777
Nagaland	0.242	0.003	0.520	0.532	0.186	0.119	1.602
Sikkim	0.052	0.037	0.204	0.093	0.160	0.004	0.549
Tripura	0.973	0.012	0.014	0.118	0.181	0.011	1.308
NE	0.495	0.020	0.090	0.095	0.130	0.021	0.851
India	0.212	0.038	0.031	0.006	0.090	0.003	0.381

Source: Authors' estimates from NSSO unit level data

Note: AP=Arunachal Pradesh, NE=North Eastern States

consumption is very less in the region which account for only 2.1 per cent of the country's total chevon/mutton consumption.

Across the states, the consumption of all types of meat and fish is maximum in Assam which may be explained by the largest population as well as largest area of Assam. The minimum consumption in most types of meat is seen in Sikkim, except chevon/mutton and beef/carabeef which is least consumed in Manipur and Tripura, respectively which may be explained on the basis of religious customs and beliefs particularly in Tripura. A clearer picture of

the consumption pattern and per capita consumption of different types of meat and fish may be explained in the tables that followed.

Estimation of production and consumption of meat and fish in the region helps in analysing the demand-supply gap situation of the region. Table 3 explains the surplus and deficit of different types of meat and fish across the NE states. It is seen that the region is having deficit in chevon/mutton and chicken which is about 196.24 and 9.77 thousand tonnes, respectively, whereas, there is surplus production of fish, beef/carabeef and pork in the

**Table 5.** Avg. monthly per consumer unit consumption (MPCC) of different types of meat in urban areas of NE states in 2009 (in kg)

States	Fish/Prawn	Chevon/Mutton	Beef/ Carabeef	Pork	Chicken	Others	Total
A.P.	0.364	0.076	0.174	0.083	0.239	0.010	0.946
Assam	0.810	0.093	0.018	0.034	0.241	0.011	1.206
Manipur	0.473	0.001	0.008	0.019	0.096	0.056	0.652
Meghalaya	0.329	0.019	0.266	0.156	0.118	0.003	0.892
Mizoram	0.174	0.006	0.157	0.693	0.111	0.049	1.188
Nagaland	0.337	0.005	0.545	0.571	0.251	0.073	1.782
Sikkim	0.214	0.058	0.379	0.122	0.282	0.000	1.055
Tripura	1.494	0.033	0.002	0.021	0.385	0.007	1.941
NE	0.710	0.060	0.084	0.118	0.223	0.020	1.215
India	0.211	0.068	0.044	0.003	0.140	0.001	0.468

Source: Authors' estimates from NSSO unit level data

Note: AP=Arunachal Pradesh, NE=North Eastern States

**Table 6.** Avg. monthly per consumer unit expenditure (MPCE) on food and meat in NE states in 2009-10

States	Rural Fdexp (₹)	Rural Meat Exp (₹)	Proportion of Meat Exp	Urban Fdexp (₹)	Urban Meat Exp (₹)	Proportion of Meat Exp	Rural-Urban Differential in MPCE on Meat(%)
A.P.	688.95	123.51	0.18	798.10	128.09	0.16	3.57
Assam	618.60	87.74	0.14	906.41	166.91	0.18	47.43
Manipur	619.17	79.10	0.13	628.53	74.74	0.12	-5.84
Meghalaya	548.43	102.53	0.19	683.59	112.32	0.16	8.72
Mizoram	654.28	101.71	0.16	911.35	179.25	0.20	43.26
Nagaland	827.77	164.35	0.20	899.23	179.35	0.20	8.36
Sikkim	713.80	63.99	0.09	1091.07	119.73	0.11	46.56
Tripura	674.60	141.69	0.21	979.74	233.14	0.24	39.23
NE	627.22	95.13	0.15	866.06	159.25	0.18	40.26
India	588.79	38.32	0.07	861.34	57.14	0.07	32.94

Source: Authors' estimates from NSSO unit level data

Note: AP=Arunachal Pradesh, NE=North Eastern States, Fdexp=food expenditure, Exp=expenditure

region. Across the states, Arunachal Pradesh, Meghalaya and Sikkim are having a deficit in fish supply. All the eight states are deficit in chevon/mutton with Assam having the highest deficit. This calls for enhancing the chevon/mutton production particularly in the states of Assam and Tripura which can be further transported to other NE states as the demand in other NE states may be unstable and fluctuating. In beef/carabeef, other than Assam and Tripura, the remaining NE states are having surplus

amount. Assam and Sikkim are deficit in pork whereas; in chicken all the NE states except Manipur and Sikkim have deficit supply. This shows that chicken production is one of the most lucrative opportunities in most of the NE states. Thus, it is observed that Assam is having surplus only in terms of fish whereas production of other meat are less than what is demanded by the population which indicates the opportunities of meeting the demand either by increasing the production of different types of meat by

**Table 7.** Avg. MPCE on different types of meat in rural areas of NE states in 2009-10 (in ₹.)

States	Fish/ Prawn	Chevon/ Mutton	Beef/ Carabeef	Pork	Chicken	Others	Total
A.P.	43.62	8.06	14.68	17.65	31.34	8.16	123.51
Assam	50.70	4.25	5.67	8.37	16.74	2.00	87.74
Manipur	34.35	0.24	16.81	9.51	13.12	5.08	79.10
Meghalaya	26.75	2.22	40.57	21.88	10.19	0.92	102.53
Mizoram	17.21	0.72	7.63	41.32	23.79	11.04	101.71
Nagaland	25.25	0.44	40.39	60.90	24.02	13.35	164.35
Sikkim	5.88	6.92	17.79	10.46	22.42	0.52	63.99
Tripura	97.72	2.46	1.64	16.48	21.83	1.56	141.69
NE	50.60	3.80	9.16	11.76	17.27	2.54	95.13
India	14.78	7.17	2.59	0.72	9.30	0.25	38.32

Source: Authors' estimates from NSSO unit level data

Note: AP=Arunachal Pradesh, NE=North Eastern States

**Table 8.** Avg. MPCE on different types of meat in urban areas of NE states in 2009-10 (in ₹.)

States	Fish/ Prawn	Chevon/ Mutton	Beef/ Carabeef	Pork	Chicken	Others	Total
A.P.	44.60	14.87	15.65	11.73	39.48	1.76	128.09
Assam	104.40	20.35	1.86	3.92	34.60	1.77	166.91
Manipur	53.45	0.18	0.90	2.17	12.12	5.92	74.74
Meghalaya	36.11	3.75	33.08	23.01	16.00	0.38	112.32
Mizoram	22.53	1.06	26.63	107.22	17.85	3.97	179.25
Nagaland	33.00	1.01	42.70	64.88	29.96	7.80	179.35
Sikkim	22.41	11.65	34.54	14.56	36.57	0.00	119.73
Tripura	174.92	8.18	0.39	3.00	45.74	0.91	233.14
NE	87.89	13.03	9.01	16.05	30.83	2.45	159.25
India	17.98	13.95	3.70	0.41	15.00	0.14	57.14

Note: AP=Arunachal Pradesh, NE=North Eastern States

providing the incentives or by internal trade with other states which are in surplus. High demand-supply gap is also seen in Tripura for chevon/mutton meat. Also, Sikkim is the other state which has deficit in all meat types except beef/carabeef which points at the opportunities for agribusiness sector, for internal trade as well as employment opportunities.

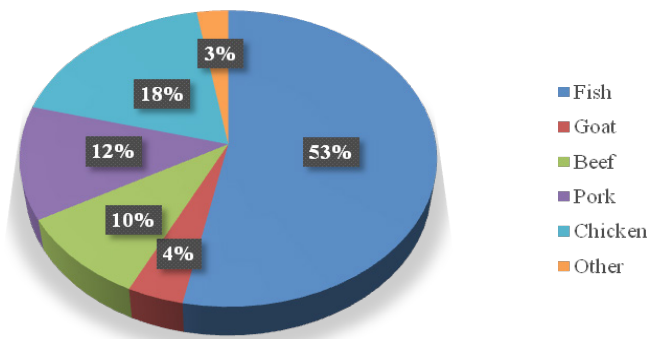
The average MPCC in rural areas of the NE states is given in Table 4. The estimates showed that overall the rural areas of the region, the average MPCC of different types of meat is more than the national average except in

chevon/mutton which points out at the lesser importance of chevon/mutton in the diet. Of all the states, only Arunachal Pradesh has higher average MPCC of chevon/mutton as compared to national level. The difference between national and NE regional level average MPCC is phenomenal particularly for beef/carabeef (3 times) and pork (6 times). Across the states in terms of total meat and fish, highest MPCC is observed in Nagaland and lowest in Sikkim. Comparing the consumption of each type of meat across the region, the highest average MPCC is of Tripura in fish followed by Assam while the lowest



average MPCC of fish is for Sikkim. The highest average MPCC for chevon/mutton is observed for Arunachal Pradesh followed by Sikkim while the lowest figure is observed for Manipur. Again, Arunachal Pradesh led in average MPCC of chicken followed by Nagaland while lowest corresponding figure is observed for Meghalaya. Nagaland led in average MPCC of beef/carabeef and pork, followed by Meghalaya and Mizoram, respectively while lowest average MPCC of beef/carabeef and pork is noted for Tripura and Assam, respectively. The lowest average MPCC of pork is possibly due to the demand not being met as shown in the table for demand-supply imbalance. Mizoram leads in average MPCC of other meat, for which Sikkim has lowest corresponding value.

**Fig. 1** Distribution of MPCE on Meats in Rural NE

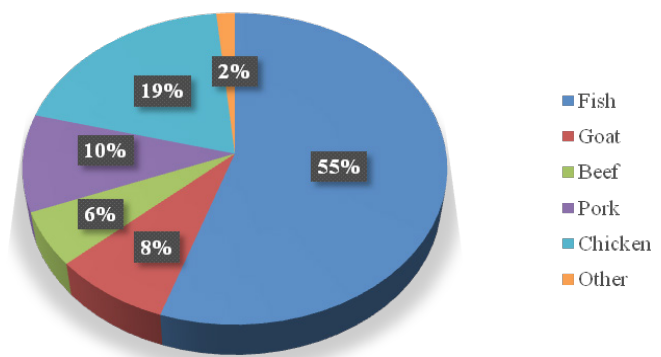


In urban areas of the region, again, it is observed that the average MPCC of all types of meat and fish (Table 5) is higher than the country's average except in chevon/mutton (only Assam and AP have higher average MPCC of chevon/mutton than national level). State-wise, highest average MPCC of total meat is seen in Tripura and lowest in Manipur. Based on different types of meat and fish, the highest average MPCC is seen in Tripura for fish and chicken while corresponding lowest average MPCC is noted for Sikkim and Manipur, respectively. Nagaland is found having highest average MPCC for beef/carabeef and other meat while lowest corresponding values were observed for Tripura and Sikkim, respectively. Assam leads in average MPCC of chevon/mutton while lowest value is observed for Manipur. Finally, average MPCC of pork is observed highest for Mizoram whereas lowest corresponding value is noted for Manipur.

A comparison of Table 4 and Table 5 reveals that there are some exceptions to the general perception that

consumption is higher in urban sector than rural sector. For e.g., average MPCC of beef/carabeef is higher in rural sector of 4 (Assam, Manipur, Meghalaya, and Tripura) out of 8 states. Similarly, MPCC of pork is higher in rural sector of 5 states (Arunachal Pradesh, Assam, Manipur, Meghalaya, and Tripura) out of 8 states. The possible reason for this pattern is that beef and pork prices are cheaper as compared to other meats and also the prices of both types of meat were lower in rural sector than urban sector which is checked from unit level data. Further, a startling observation is that for Manipur, MPCC of all the different types of meat is higher in rural sector than urban sector except in case of fish.

**Fig. 2** Distribution of MPCE on Meats in Urban NE



The average MPCE on food in the NE region in 2009-10 (Table 6) is higher than the national average with a higher difference seen in the rural areas whereas, in urban areas food expenditure is almost same even though the region spend a little more per consumer than the average of the country. Meat as a proportion of the food expenditure accounts for very high percentage in the region with 15 per cent in the rural areas and 18 per cent in the urban areas as compared to the rest of the country in which meat accounts only 7 per cent of the food basket expenditure both in rural and urban areas. On an average, the rural-urban differential in MPCE on meat is about 40 per cent which is higher than the country's rural-urban differential, which means that there is larger difference in the expenditure between rural and urban areas in the region than the rest of the country. Looking across states, the highest differential is observed in Assam followed by Sikkim and Mizoram, whereas, in the case of Manipur a contrary result is seen in which proportion of meat expenditure out of the food basket is higher in rural area than in the urban area which



is in conformity with the result we found while comparing Table 4 and Table 5 where it was observed that MPCC of all types of meat is higher in rural sector than urban sector except fish. In rural area, the highest average MPCE in food and meat is found in case of Nagaland which is about ₹. 827.77 and ₹.164.35 per person per month, whereas, the proportion of meat expenditure is highest in Tripura followed by Nagaland and lowest in Sikkim with 21, 20 and 9 per cent respectively. In urban areas, Sikkim spend more on food as compared to other states of the region, and Tripura spend more on meat than other states with 24 per cent of the average MPCE on food accounts to meat expenditure. Again, urban Sikkim spends the least proportion on meat (11%) as compared to other states.

The average MPCE on different types of meat and fish across the rural areas of the region in 2009-10 is shown in Table 7, with Tripura having highest expenditure on fish/prawn, Sikkim on chevon/mutton, Nagaland on beef/carabeef, pork and other meat, and Arunachal Pradesh on chicken. The states that have least average MPCE on different types of meat are Sikkim on fish/prawn and other meat, Manipur on chevon/mutton and pork, and Meghalaya on chicken. In all types of meat the average MPCE of the rural areas of the region is much higher than the national average except in case of chevon/mutton.

In urban areas it is observed that all average MPCE on different types of meat in the region is higher than the country's average whereas, almost equivalent expenditure is seen in chevon/mutton (Table 8). Across the urban areas of the NE states, the average MPCE on fish/prawn and chicken is estimated to be highest in Tripura but it spends lowest on beef/carabeef. Highest expenditure on chevon/mutton is seen in Sikkim, highest beef/carabeef and other meat expenditure is in Nagaland, and Mizoram spend highest on pork. Urban Manipur is observed to spend least on chevon/mutton, pork and chicken and lowest average MPCE on fish/prawn and other meat is seen in Sikkim as compared to other states in the region. Overall, the average MPCE on meat and fish ranges from ₹. 74 to ₹. 233 with the lowest in Manipur and highest in Tripura, and the region average expenditure on total meat and fish is much higher than the national average.

If Table 4 and Table 5 are compared with Table 7 and Table 8, respectively, it may be observed that highest and lowest of the corresponding tables are almost similar. The preference for different types of meat across the region

which is depicted in the average MPCE tables may be linked to religious customs and food habits practiced across the states which is seen in case of pork and beef/carabeef which seem to be least preferred in the states of Assam, Manipur and Tripura.

The percentage distribution of MPCE on meat and fish in the rural and urban areas of the region is given in Figure 1 and Figure 2, respectively. The figure depicts that both in rural and urban areas, the maximum expenditure is on fish followed by chicken and pork and lowest expenditure on other types of meats. Rural areas seem to prefer beef and pork than the urban areas which may be explained by the difference in prices as it is seen that in most cases pork and beef are relatively costlier in urban areas. The liking of chevon/mutton in urban areas may be as a result of the influence of urbanisation. Fish is another product that is preferred more in the urban areas as compared to the rural areas.

## CONCLUSION

Given the production, consumption pattern and demand-supply gap of meat and fish in the NE region, it is a matter of concern to the policy makers and various stakeholders to look into meat and fish sector in a holistic way. It is particularly important to orient their export policies as many of them are border-states and also, the surplus meat can be marketed to nearby states having deficit production. The government of the meat-deficient states should push the production of the respective types of meat by providing incentives to livestock farmers so as to avoid loss to state exchequer while providing lucrative employment opportunities. Increasing meat production will create pressure on the feed sector. Thus, in order to avoid excess cost of production, local production of feed should be ensured. It will also open up opportunities to feed companies and generation of employment. Infrastructure development will also help to reduce the rural-urban differentials, increase shelf-life and also it will improve the processing of meat.

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